REMARKS

In general, the invention features an array of transfected eukaryotic cells. The array has at least 96 locations placed at a density of at least 100 locations per square centimeter. Each location has eukaryotic cells that are transfected with one or more defined nucleic acid molecules.

Rejections Under 35 U.S.C. 102(e)

Claims 160-175 are rejected as being anticipated by Taylor. Applicant respectfully traverses this rejection.

Claim 160, the sole rejected independent claim, requires an array of transfected eukaryotic cells, the array having a density of at least 100 locations per square centimeter. The array has least 96 locations, with each location including eukaryotic cells that are transfected with one or more defined nucleic acid molecules. In order to anticipate claim 160, Taylor must teach or suggest every limitation of the claim. Thus, Taylor must first disclose an array of at least 96 locations. Second, Taylor must disclose that these locations are at a density of at least 100 locations per square centimeter. Finally, Taylor must teach or suggest that each of the locations has transfected eukaryotic cells.

In the Advisory Action mailed November 17, 2005, the Office alleges that Taylor teaches or suggests each of the foregoing limitations, but in doing so the either Office misrepresents the teachings of Taylor or reads from Taylor that

which is not present. First, the Office indicates that Taylor teaches only that "the size of a well on [a] micro-patterned array ranges from 200 micron to 400 micron," referring to Fig. 3B as support. This simply isn't the case—Taylor teaches that the wells may be as large as 1 mm in diameter (Col. 6, l. 14). Nonetheless, based on these well sizes, the Office then calculates the potential density of locations. To makes these calculations, the Office assumes that the wells would be packed at the highest possible density, despite the fact that Taylor at no point suggests that maximal density is acheivable or even desirable.

The Office then contends that because Taylor demonstrates that it is mathematically possible to make an array of at least 96 locations having a density of at least 100 locations per square centimeter, Taylor must teach such an array. Again, however, it must be noted that Taylor does not describe an array of at least 96 locations having a density of at least 100 locations per square centimeter. While Taylor does teach the production of a 20 mm x 30 mm micropatterned array of cells, there simply is no suggestion that this array would consist of at least 96 locations having a density of at least 100 locations per square centimeter, as is required by the claim. Indeed, Fig. 1A depicts a 20 mm x 30 mm micropatterned array of cells having 96 locations and a density of 16 locations per square centimeter. It is improper for the Office to read into Taylor that which Taylor neither teaches nor suggests.

The Office further contends that Taylor not only describes an array of at least 96 locations having a density of at least 100 locations per square centimeter (which it doesn't), but that Taylor further describes the cells at each location being transfected with one or more nucleic acids. Again, Applicant respectfully disagrees. At most Taylor describes a micropatterned array of cells genetically engineered to contain a reporter gene. But Taylor is silent on the notion of having transfected eukaryotic cells in at least 96 locations at a density of 100 locations per square centimeter.

In sum, Taylor fails to describe an array of at least 96 locations of transfected eukaryotic cells having a density of at least 100 locations per square centimeter, as is required by the claims. The Office has assembled the various components of the claimed invention through inference and conjecture. By doing so, the Office has created a version of Taylor that teaches what the actual reference does not, and has improperly extracted from Taylor a disclosure that would not have been recognized by a person of skill in the art. The Federal Circuit has made it clear in *ATD Corp. v. Lydall, Inc.* (159 F.3d 534, 48 USPQ2d 1321, Fed. Cir. 1998) that:

> An anticipating reference must describe the patented subject matter with sufficient clarity and detail to establish that the subject matter existed and that its existence was recognized by persons of ordinary skill in the field of the invention.

Because Taylor fails to describe every limitation of the claimed invention with sufficient clarity and detail, Applicant respectfully requests that the rejection of claims 160-175 and 237-240 as being anticipated by Taylor be withdrawn.

Rejections Under 35 U.S.C. 103(a)

Claims 176 and 177 are rejected as being obvious over Taylor in view of Montgomery et al. (Proc. Natl. Acad. Sci. USA 95:15502-15507, 1998). The Office asserts that one skilled in the art would be motivated to replace the reporter genes employed by Taylor with the double-stranded RNA and modified nucleic acids of Montgomery. Applicant respectfully traverses this rejection.

Taylor is discussed above. As noted by Applicant, Taylor does not describe an array of at least 96 locations of transfected eukaryotic cells having a density of at least 100 locations per square centimeter, as is required by the claims. This deficiency is not remedied by Montgomery, which teaches the introduction of double-stranded RNA into the nematode *Caenorhabditis elegans*. Because no combination of the cited references teaches or suggests each and every limitation of the claimed invention, the rejection of claims 176 and 177 as being obvious should be withdrawn, and such action is respectfully requested.

Regarding claim 177, which specifies that in at least one location one or more defined nucleic acid molecules has a modified base or backbone, Applicant further notes that, contrary to the assertions of the Office, Montgomery does not

describe transfecting cells with nucleic acid molecule having a modified base or backbone. The portion of Montgomery relied upon by the Office describes an *in situ* hybridization protocol in which chemically fixed and permeabilized cells are contacted with a digoxigenin-labeled nucleic acid in order to detect the presence of an RNA transcript. This simply is not the same as transfection of a cell with a modified nucleic acid molecule, and for this reason as well the rejection of claim 177 as being obvious should be withdrawn.

Even if Taylor described an array having the required parameters (which it does not), claims 176 and 177 would still not be obvious over Taylor in view of Montgomery, because the cited references provide no motivation for one to replace the reporter gene employed by Taylor with any other nucleic acid molecule. Applicant's reasons now follow.

Claims 176 and 177 are drawn to a cell array having at least 96 locations at a density of at least 100 locations per square centimeter. In at least one location, the cells are transfected with nucleic acid molecules encoding a double-stranded RNA molecule (claim 176) or a modified nucleic acid molecule (claim 177).

The sole reason Taylor sets forth for transfecting cells is so that "the cells can be modified with luminescent indicators of cell chemical or molecular properties...and analyzed in the living state" (column 12, lines 44-47). To that end, Taylor proposes using cells containing "luminescent reporter genes, although other types of reporter genes...are also suitable." Thus, Taylor is exclusively

considering the use or reporter genes, and no other type of nucleic acid molecule. Nor does Taylor suggest modifying the nucleic acid molecule in any manner.

Nothing in either Taylor or Montgomery provides any motivation for one skilled in the art to substitute Montgomery's double-stranded RNA for Taylor's reporter genes. The Office states that one would have been motivated to incorporate a double-stranded RNA to inhibit the expression of a gene of interest, but the Office fails to point to any support for this proposition in either Taylor or Montgomery. Taylor at no point suggests inhibiting gene expression in a cell array. Montgomery is similarly silent on this proposition, and exclusively discusses inhibiting gene expression in the context of an entire animal.

As is discussed above, Montgomery does not even describe transfecting cells with a modified nucleic acid molecule. Even if Montgomery did, however, there still wouldn't be any motivation to use such a nucleic acid molecule in Taylor's array, because Taylor was focused exclusively on utilizing reporter genes.

Applicant submits that, for the foregoing reasons, one would not have been motivated to use Montgomery's double-stranded RNA in Taylor's cell array. Reconsideration and withdrawal of the rejection of claims 176 and 177 as being obvious over Taylor and Montgomery is respectfully requested.

CONCLUSION

Applicant submits that the claims are in condition for allowance and such action is respectfully requested. Enclosed are a petition to extend the period for replying for four months, to and including April 19, 2006, and a check for $795.00 for the required petition fee. If there are any charges or any credits, please apply them to Deposit Account No. 03-2095.

Respectfully submitted,

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